Towards Sustainable Heritage Building Conservation in Malaysia

Mahmoud Sodangi¹, Mohd Faris Khamidi², Arazı Idrus³

¹Post-doctoral Research Engineer, Civil Engineering Department, Universiti Teknologi PETRONAS, Malaysia
Email: abbax9@yahoo.co.uk
²Senior Lecturer, Civil Engineering Department, Universiti Teknologi PETRONAS, Malaysia
Email: mfaris_khamidi@petronas.com.my
³Professor, Civil Engineering Department, National Defence University of Malaysia
Email: arazı_idrus@petronas.com.my

Abstract
It has been universally recognised that the conservation of heritage buildings has environmental sustainability benefits. Malaysian government spends quite a huge amount of money in conserving national heritage buildings in the country and the buildings deteriorate just few years after the conservation works. Despite the enactment of the National Heritage Act and establishment of the National Heritage Department coupled with the existence of many heritage trusts and legislations related to heritage conservation in Malaysia, maintenance practices for conserving heritage buildings seem to remain very poor. This could be strongly attributed to lack of clear guidelines for custodians of heritage buildings in managing the maintenance of the buildings in their custody. Maintenance management practices can be better explained and understood if there is a comprehensive guideline that can be referred to by the custodians of heritage buildings, which at this time does not exist. Thus, the goal of this paper is to make as strong case for developing a framework that would act as a basis for heritage organizations to prepare guidelines for sustainable management of heritage building conservation in Malaysia. This paper is part of an ongoing research aimed at developing a framework for sustainable management of heritage building conservation in Malaysia. The proposed conceptual framework is significant for its potential benefit in sustaining the buildings and their associated values and enhancing the safety of the buildings efficiently with minimum resources. It is expected that the framework could serve as a basis for heritage organizations to prepare guidelines for owners and custodians of heritage buildings to manage the maintenance of their buildings.

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1. Introduction
Sustainable development and heritage conservation have become guiding principles for our modern industrial society. Besides, it has been universally recognised that the conservation of heritage buildings has environmental sustainability benefits. Heritage building conservation reduces energy usage associated with demolition, waste disposal and new construction, and promotes sustainable development by conserving the embodied energy in the existing buildings. In order to achieve a sustainable management of heritage building conservation in Malaysia, it is vital that maintenance takes a leading role in conserving the heritage values of the buildings. Various authors have described regular maintenance as the most important, pragmatic, sustainable and philosophically appropriate method of conserving heritage buildings. However, poor maintenance management of heritage buildings leads to serious building defects that could threaten both the safety of occupants and building fabric.

Maintenance of heritage buildings is quite different from new buildings because the fabric of a heritage building has cultural significance which must be retained maximally and the authenticity of a heritage building depends essentially on the integrity of its fabric. The maintenance of heritage buildings involves repairing the building fabric very close to the original using traditional techniques and traditional matching materials and being sensitive to the original structure. Therefore, the maintenance of a heritage building is done without unnecessarily disturbing or destroying the historic fabric; damaging the character of the building and altering the features which give the building historic, architectural and cultural significance.

To this regard, it is important to come up with a clear maintenance management framework to guide those who provide advice, make decisions about or undertake maintenance works to heritage buildings including owners, managers and custodians on how to systematically and effectively evaluate, plan and implement maintenance management programme for their heritage buildings, and thereby able to extend the life of the original building fabric and expect considerable savings in costs and time in future conservation works. A well maintained heritage building enhances the quality of life for everyone in the community, help to attract investment to the community (tourism product), contribute to regeneration and provide a source of local pride and sense of place (Forsyth, 2007).
2. Background of the Research

History deals with human actions, that is, actions done by individuals and group of individuals, which explains the circumstances under which humans lived and the way they reacted to these circumstances (Mises, 1985). It also deals with people’s conscious reaction to the state of their environment, which include both the natural and built environment as influenced by the actions of preceding generations as well as by those of their contemporaries (Mises, 1985). Folarin (2012) emphasizes that history as a human preoccupation, creates a perpetual link between man and his roots, by which he gets a firm control of his society and thus becomes the master of his social environment. The past, the present and the future are not only related, they are mutually interdependent.

In the earliest times, people lived in caves and tents because of the necessity for warmth and shelter (Watkin, 2005). However, by the new stone age (8000 – 5000 BC), people in Central Europe had started building houses for themselves though many people continued to live in caves and tents. As the people aged, they began to build complicated houses such as the mammoth, clay, and then more complex concrete houses (Watkin, 2005). Between 3050 BC to the early 20th century, various notable building architectures were witnessed due to civilizations and passage of generations. These notable architectures include Ancient Egypt, Classical, Early Christian & Medieval, Romanesque, Gothic, Renaissance, Baroque, Rocco, Georgian, Neoclassical, Victorian, Art Nouveau, Beaux Arts, Neo-Gothic and 20th Century Architecture. The people that lived in these generations and civilizations have left behind indelible marks in the form of heritage to the present and future generations.

Heritage is created by attaching significance and values in what our predecessors left behind. It is generally understood to include three key entities: material culture, the natural environment and the built environment (ICOMOS, 1999). The Malaysian National Heritage Act (2005) defined heritage under section 67 as “any heritage site, heritage object, underwater cultural heritage or any living person declared as National Heritage”. However, a broader definition of heritage was provided by ICOMOS (1982), where heritage is described as the ideas, habits, and customs taking place in a particular geographic context, that have given rise to traditions, folklore, mentality, ways of doing things, architecture, and a social
structure. As pointed out by Ashworth (2001), the heritage of society or people is irreplaceable and an important foundation for development. It encompasses biodiversity, collections, past and continuing cultural practices, knowledge, living experiences, landscapes, historic places, sites and built environments (ICOMOS, 1999).

The built environment provides the setting and backdrop by which people live their lives and impacts on their senses, emotions, participation in physical activity and community life and general well-being (Law, 2000). Buildings are more than just props in people’s lives; they are imbued with meaning and resonance, as they signify people’s personal histories, interpersonal relationships, and shared events in people’s extended relationships, families, communities and wider culture (Ashworth, 2001).

According to Law (2000), heritage buildings are tangible manifestations of town’s identity and a physical expression of the cultural heritage of the people of the town. The buildings provide a link to the history and culture of a nation and particular town. Heritage buildings very often provide a suitable background, or home, for the cultural life of a town. Generally, heritage buildings are located in central parts of a town and, combined with appropriate services; they help make the central parts of a town attractive area to visit by residents and tourists. The built heritage is important as it helps to maintain community identity, enhance the image of the area and local neighbourhoods, contribute to the quality of life for residents and communities, assist with economic development and tourism initiatives; and initiate conservation led regeneration (Law, 2000).

Genesis of Heritage Conservation

The fruits of built heritage conservation efforts are now easily valued because conserved heritage buildings and sites are today seen and enjoyed by much of the world’s population (Stubbs, 2009). Societies have continuously been worried by the loss of valued assets and aspects of their environments. The origin of conservation minded actions dates back to the time the first person attempted to control unwanted changes to his living environment (Watkin, 2005).
In other words, the instinct to conserve dates not long after early humans began creating objects and structures that could be used continually. Stubbs (2009) pointed out that researchers date the earliest creation of durable stone tools and equipment to about 3000000 BCE and the oldest evidence of durable expressions of artistic and spiritual beliefs date to at least 50000 BCE. He further pointed out that the earliest evidence of the maintenance of buildings dates back to about 8000 BCE, which shows that from time immemorial, humans became interested in protecting their practical and symbolic legacies.

Between 960-1127 CE, tangible evidence of conserving artistic works of the distant past dates back in China and Northern Song Dynasty when inventories and collections of ancient bronzes were formed (Stubbs, 2009). Due to deep respect tradition in China, conservation awareness was carried into the 20th century. At that time, China and its neighbours have developed wider interest in conserving heritage (Stubbs, 2009). Educated Europeans in the early 15th century showed a growing understanding of human history as elements of the ‘age of humanism’ and afterwards the ‘age of reason’ developed together with significant modifications in the area of arts and science (Stubbs, 2009). The free quest for knowledge and its teachings from the Renaissance onward meant that with every passing year, people knew more about their past than ever before.

Since the beginning of the 18th Century; heritage conservation has progressed side by side with allied developments in history, archaeology, museology and ecology (Stubbs, 2009). The focus then was to save ancient monuments, significant religious buildings and national symbols. From the late 18th century, many heritage conscious individuals attempted to conserve heritage buildings and sites to the way they were thought to have previously appeared. By the 19th century, monuments were reordered and reconstructed with little proven evidence to what was thought to be the original design intention (Orbasli, 2008). The restoration works paid little respect to originality of the monuments. Towards the end of the 19th century, a popular restoration approach was adopted. The areas around culturally significant monuments were cleared and the monuments were then displayed in the midst of large parks and gardens.
However, Orbasli (2008) noted that a growing anti restoration movement in the latter half of the 19th century began to emerge as an opposition to some of the poor restoration practices. The Society for the Protection of Ancient Buildings (SPAB) was established in 1877 in England. SPAB suggested that heritage building needed to be maintained within their settings rather than being isolated in a landscaped park. The SPAB’s criticism of restoration practices of the time led to the replacement of the word ‘restoration’ with ‘conservation’ in England. According to SPAB, real heritage lay in the authentic monument, not in modern replicas. Also, the value of historic cities lay in terms of collective value of buildings, streets, and spaces that made up the character of old towns, which were being lost to modern developments and street widening projects. The conservative repair philosophy was introduced upon a manifesto written by William Morris and other founding members of SPAB in 1877.

Even though the idea of protecting cultural and natural heritage sites around the world began after the World War I; momentum for its actual establishment was not witnessed until the 1950s (Jokilehto, 2002). The nationalistic feelings in the aftermath of World War I and II and the economic value associated with cultural tourism triggered a growing interest in heritage, which later defined conservation in Europe in the 20th century.

To this regard, the Hague Convention which was the first UNESCO Convention on cultural heritage was launched in 1954 in order to protect cultural property in the event of armed conflict (Jokilehto, 2002). Development of a network of supportive legislation for heritage conservation and collaboration with a host of international heritage conservation charters, programs and projects propagated by international organizations such as UNESCO and ICOMOS in the 20th century have contributed to making heritage conservation a participatory concern for millions of people all over the world (Jokilehto, 2002).

Heritage conservation approaches promote greater integration between disciplines (Orbasli, 2008). Also, understanding the values of heritage emphasize the significance of multidisciplinary approaches among history, archaeology, museology, conservation, architecture, civil engineering, environmental engineering, quantity surveying and town planning among
others. Civil engineering researchers in the field of heritage conservation need to establish close working relations with social science disciplines.

Heritage conservation is now a well-integrated worldwide concern that commonly engages large segments of the world’s population. It has become a vibrant and autonomous field with many centres of interest including archaeology, museology, conservation science, civil engineering, urban planning, tourism, education and even national economic policy. This is evident by the growing public and institutional support dedicated to conservation of heritage buildings and sites.

Heritage Building Conservation and Tourism

The popular appeal of cultural heritage is easily seen through observations of heritage tourism. The rapidly globalizing and modernizing world is witnessing a fast emergence of heritage consciousness. With the work of international organizations like the United Nations Educational, Scientific and Cultural Organization (UNESCO) and other notable heritage organizations and agencies of various countries, the need for understanding and protecting heritage has tremendously increased.

In discussing heritage building conservation, Sodangi et al. (2011) pointed out that the identity of a people and nation is largely defined by their heritage which is a legacy that is passed down from one generation to another. These legacies are irreplaceable sources of life and inspiration which provide people with a sense of place and inform the people about who they are and how their society has developed over time. Heritage places as unique and diverse as the Mount Kinabalu of Malaysia, the Pyramids of Egypt, the Taj Mahal of India, the Great Barrier Reef in Australia and the Baroque Cathedrals of Latin America make up some of the world’s heritage.
Heritage could either be natural or cultural which may be significant for historical, architectural, scientific or for any other distinct cultural value. Natural heritage includes culturally significant landscapes, landforms, flora and fauna. In contrast, cultural heritage includes tangible culture (such as buildings, monuments, tombs, artefacts, books and works of art) and intangible culture (such as knowledge, language, tradition, music and folklore).

While 'heritage' suggests a very wide subject, this research focuses on heritage buildings since they are regarded as the main components of tangible cultural heritage that societies want to keep, share and pass on to future generations. Besides, they are regarded as fundamental cultural heritage elements that strengthen a country’s national identity and sovereignty as well as capture its soul and spirit (Ahmad, 2006). The buildings remain the best form in which historic cultural heritage can be expressed. The buildings characterize the history of people and nations. They serve as the table from which this history can be read and in this way, the life of a society in the past, its values in the present and directions for the future are decorated on heritage buildings. Idrus et al. (2010) describes heritage buildings as
buildings built in the past which have high historical and architectural values and require continuous care and protection to conserve their cultural heritage significance for as long as possible. Similarly, Feilden (1982) had previously described heritage buildings as irreplaceable sources of life and inspirations which for various reasons society has decided shall be conserved for as long as possible and they differ from modern buildings because they are expected to last forever.

The growth of tourism has propelled the emergence of heritage tourism which is a potential form of alternative tourism to both local and foreign tourists (Badaruddin, 2005). Over the years, the global influx of tourists to Malaysia (see Figure 3) and the growing interest in heritage tourism have increased the number of heritage tourists visiting heritage cities of Malaysia especially Malacca and Penang (Badaruddin, 2005). In Malaysia today, heritage buildings are regarded as highly valuable assets due to their cultural significance and tourism potentials (Mustafa et al., 2011). The buildings are regarded as essential products of promoting heritage tourism because of their strong influence in motivating cultural heritage tourists to visit the country. Cultural heritage tourists are attracted to these buildings due to their cultural uniqueness, high historical and architectural values, and the strong desire to see something different (Mustafa et al., 2011).

The increasing consciousness in the cultural significance of the buildings has helped in conserving these assets to promote heritage tourism as well as boost revenue generation in the country. In the year 2010, the country attracted 24.6 million foreign tourists and generated RM56.5 billion to the tourism sector (Sodangi et al., 2011). Therefore, it became imperative to conserve heritage buildings in Malaysia considering their high tourism potentials and the fact that the buildings serve as fundamental cultural heritage elements that strengthen Malaysia’s national identity and sovereignty as well as capture its soul and spirit. It is mainly through heritage conservation that a society can pass onto future generations what is currently identified as being of cultural significance today (Forsyth, 2007). Every building whether heritage or new, requires care and protection to limit deterioration (Idrus et al., 2010). For heritage buildings, efficient maintenance management practices are essential in extending the
life of the buildings and avoiding the need for potentially expensive and disruptive repair works, which may damage the heritage values of the building.

Figure 3: Tourist arrivals in Malaysia and revenue generated to the government
(Source: Tourism Malaysia, 2010)

Description of Problem Identification

Malaysian government spends quite a huge amount of money in conserving national heritage buildings in the country and the buildings deteriorate just few years after the conservation works. For instance, over a hundred thousand Ringgit Malaysia was spent in the conservation of Istana Kenangan which houses the Perak Royal Museum in 2005 but by the year 2010, exactly five years after the conservation works, the once elegant building was deteriorating to the extent of near collapse.

According to Brereton (1991) all elements of heritage buildings tend to deteriorate but at a greater or lesser rate based on the age, function, location, high cost of maintenance and lack of adequate maintenance funds. Nevertheless, various authors (Ahmad, 1994; Fielden, 2000; Forsyth, 2007; Mustapa et al., 2007) emphasize that heritage buildings will rapidly decay and degrade when maintenance is poorly managed. The authors further emphasizes that poor
maintenance management of heritage building causes the buildings to deteriorate and lose their heritage values.

It is quite natural that as buildings aged, they will be exposed to serious building defects and deterioration. As such, every building whether heritage or new, requires continuous care and protection to limit deterioration. For heritage buildings, efficient maintenance management approaches are essential in extending the life of the buildings and avoiding the need for potentially expensive and disruptive repair works, which may damage the buildings’ heritage value (Idrus et al., 2010)

Notwithstanding the increasing consciousness among the public on the need for conserving the nation’s cultural heritage, many heritage buildings in Malaysia still remain in poor conditions with signs of serious building defects threatening their survival (Kamal et al., 2008). This is evident from a survey of 209 heritage buildings at four historic towns and cities i.e. George Town, Ipoh, and Kuala Lumpur, in order to identify the current conditions of the heritage buildings and the level of building defects that occur at those buildings. Kamal et al. (2008) revealed among other findings that 39% of the buildings surveyed were poorly maintained. More disturbing was the fact that 83% of the buildings surveyed had signs of serious building defects (Kamal et al., 2008). Kamal et al. (2008) further revealed that 74% of the buildings were not properly conserved while about 84% of the buildings were in dire need of urgent conservation works.

Despite the enactment of the National Heritage Act and establishment of the National Heritage Department coupled with the existence of many heritage trusts and legislations related to heritage conservation in Malaysia, maintenance practices for conserving heritage buildings seem to remain very poor (Ahmad, 2005; Kamal et al., 2008; Idrus et al., 2010; Eshak, 2011; Mohamad, 2011; Tharazi, 2011; Sodangi et al., 2011). This could be strongly attributed to lack of clear guidelines for custodians of heritage buildings in managing the maintenance of the buildings in their custody. Maintenance management practices can be better explained and understood if there is a comprehensive guideline that can be referred to by the custodians of heritage buildings, which at this time does not exist.
There are several existing frameworks for managing the maintenance of normal buildings. However, as mentioned earlier; the maintenance management strategy for heritage buildings is different from normal buildings because the fabric of heritage building has cultural significance which must be retained maximally and the authenticity of heritage building depends essentially on the integrity of its fabric. Besides, the maintenance of heritage buildings involves repairing the building fabric very close to the original using traditional techniques and traditional matching materials and being sensitive to the original structure. Hence, the maintenance of heritage building takes a cautious approach in order not to unnecessarily disturb or destroy the historic fabric; damage the character of the building and alter the features which give the building historic, architectural and cultural significance. Therefore, a specific framework is required for managing the maintenance of heritage buildings.

Though there are some heritage building maintenance manuals and best practice guidelines, they do not guide on how maintenance should be conceived, managed and integrated with other key management activities in the context of heritage building conservation. Besides, the set of factors that influence effective maintenance management, maintenance cost prediction tool and prioritization of building defects have not been incorporated into these manuals and best practice guidelines. Thus, it becomes difficult to use them to plan, control, organize and monitor maintenance activities.

Moreover, the previous works do not provide for understanding the heritage building; maintenance planning and development; maintenance staffing; predicting maintenance costs, handling maintenance information and maintenance control. Thus, the previous works may not be effective in facilitating holistic and consistency in the planning, organizing, directing, implementing and controlling heritage building maintenance management. Understanding the heritage building; maintenance planning and development; maintenance staffing; predicting maintenance costs, handling maintenance information and maintenance control should form parts of the philosophy and principle for managing the maintenance of heritage buildings. This seems to indicate that previous works may not provide the tactful and consistent initiation and implementation of effective maintenance management of heritage buildings.
Therefore, the goal of this research is to develop a framework that would act as a basis for heritage organizations to prepare guidelines for managing the maintenance and conservation of heritage buildings.

3. Research Hypotheses

Based on review of literature and discussions with some heritage building conservation experts from various heritage organizations in Malaysia, it is hypothesized that:

\[ H_0 = \text{lack of maintenance management framework for heritage buildings conservation does not significantly influence the poor practices of maintenance managers and the poor physical conditions of the buildings.} \]

\[ H_1 = \text{lack of maintenance management framework for heritage buildings conservation significantly influences the poor practices of maintenance managers and the poor physical conditions of the buildings.} \]

The hypothesis above is diagrammatically represented as:

![Diagram](image)

Figure 1.2: Schematic diagrams showing the relationship between maintenance management framework; poor maintenance management practices and poor physical conditions of heritage buildings.

4. Scope and Limitations

This research covers only national heritage buildings in Malaysia. Heritage buildings that have not been gazetted as national heritage buildings are not included. The research requires adopting case study as one of the research strategies in order to understand the managerial practices adopted by maintenance managers and their organizations in managing the
maintenance of heritage buildings in Malaysia. The research poses the “how” and “why” questions about the maintenance management practices for the conservation of heritage buildings over which the researcher has little or no control. The research focuses on national heritage buildings that were built in the 20th century and are presently used as royal museums and galleries in Malaysia. The rationale for this selection is due to the fact that royal museums and galleries bring about a sense of nostalgia and serve as source of great pride to any society (Keremo, 2003).

Also, royal museums and galleries are the repositories of cultural heritage which without them, the society would be adrift in time and a society that has no past has no future. Moreover, royal museums and galleries are semi-academic and educational institutions that hold a great wealth of information in the form of material heritage which are evidences of our past. They are similar to libraries as they provide rich resources for useful learning and nation building. Also, the encyclopedic collections are useful for helping us know who we are, our identity and history. Economically, a well conserved museum boosts tourism and generates revenue to the government thereby contributing to the economy of the country.

In order to increase the generalizability and validity of the case studies findings, the cases (heritage buildings) in this research were strategically selected based on the intrinsic differences in their present physical conditions, which are; good, fair and poor conditions. As questionnaire survey and case studies were the methodologies employed for this research, the respondents for this research were divided into two sets; the first set participated in the questionnaire survey while the second set participated in the comparative case studies. Respondents for the questionnaire survey are heritage conservations experts from government heritage organization departments, non-governmental heritage organizations and heritage contractors. On the other hand, maintenance managers of the selected national heritage buildings were the respondents in the comparative case studies. In the context of this research, building refers to the building fabrics and structures. Also, the main issues do not cover the artefacts exhibited in the buildings while the defects addressed do not include defects that relate to substructure works (foundations cracking, foundation bowing, foundation settlement etc).
4. Significance of the Research

Heritage buildings remain the best form in which historic cultural heritage can be expressed. The buildings are regarded as the main components of tangible cultural heritage that societies want to keep, share and pass on to future generations and are regarded as fundamental cultural heritage elements that strengthen a country’s national identity and sovereignty as well as capture its soul and spirit (Ahmad, 2006). In Malaysia today, heritage buildings are regarded as highly valuable assets due to their cultural significance and tourism potentials (Idrus et al., 2010). The buildings are regarded as essential products of promoting heritage tourism because of their strong influence in motivating cultural heritage tourists to visit the country. In the year 2010, the country attracted 24.6 million foreign tourists and generated RM56.5 billion to the tourism sector (Sodangi et al., 2011). In the same way, the buildings are highly precious considering their contribution in keeping past historical evidences, retaining history, belief, identity and values of a society.

The buildings also provide architectural continuity and boost revenue generation through heritage tourism. Considering the numerous benefits of conserving heritage buildings, it can be strongly affirmed that the country’s heritage buildings deserve the best practice in the maintenance management of these buildings in order to continuously care and protect them from being demolished so as to prolong their life span and functions and generate more tourism revenue to the government. However, several authors have pointed out that management practices for maintaining heritage buildings in Malaysia are poor (Ahmad, 2005; Kamal et al., 2008; Idrus et al., 2010; Eshak, 2011; Mohamad, 2011; Tharazi, 2011). Besides, heritage organizations and trusts do not provide guidelines for managing the maintenance of heritage buildings in the country (Ahmad, personal communication, December 6, 2010, JWN).

Therefore, this research is significant for its potential benefit in sustaining the buildings and their associated values and enhancing the safety of the buildings efficiently with minimum resources. It is expected that the framework could serve as a basis for heritage organizations to prepare guidelines for owners and custodians of heritage buildings to manage the maintenance of their buildings. With the application of the guidelines; less resources might be
required for heritage building maintenance and the buildings could be maintained proactively thereby slowing down the rate of deterioration of valuable original materials, avoiding potential hazards, reducing maintenance costs, and improving the buildings’ life and performance. Similarly important, the research could serve as drive for further research in order to improve and achieve best practices in the maintenance management of heritage buildings.

5. Conclusions

In expecting the main research, this conceptual paper has planned to go on with the research. The maintenance management of heritage buildings presents quite different challenges as compared to non heritage buildings. The aim of this study is the development of maintenance management framework for the conservation of heritage buildings in Malaysia. Many heritage buildings are decaying due to age, neglect, high maintenance cost and poor maintenance management. Though there are some heritage building maintenance manuals and best practices, they do not guide on how maintenance should be conceived, managed and integrated with other key management activities in the context of heritage building conservation. The previous works do not consider set of factors that influence maintenance management, maintenance cost prediction tool and the prevailing building defects. Thus it becomes difficult to use them to plan, control, organize and monitor maintenance activities. The Malaysian government keeps spending huge amount of money in conserving national heritage buildings in the country and the buildings keep deteriorating just few years after the conservation works on the buildings. This is a loss to the government and harmful to the originality and integrity of the fabric of the buildings, performance of the buildings and safety of lives and properties. By way of intervention, there is the urgent need for a framework that would guide on how maintenance should be conceived, managed and integrated with other key management activities in the context of heritage building conservation. The maintenance management framework presents a promising guideline for the management of heritage building conservation. The proposed framework would consider set of factors that influence maintenance management, maintenance cost prediction tool and the prioritization of building
defects. The main goal of the framework is to help plan, control, organize and monitor maintenance activities.

References


